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Coal Mine Low-concentration Carrier
Catalytic Methane Transducer

矿用二氧化碳传感器通用技术条件

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Coal Mine Low-concentration Carrier Catalytic Methane Transducer

矿用二氧化碳传感器通用技术条件

1 Scope

This standard specifies technical requirements, test methods, inspection rules as well as marking, packaging, operating instructions, transportation and storage of the coal mine low-concentration carrier catalytic methane transducer.

This standard is applicable to the coal mine low-concentration carrier catalytic methane transducer (hereinafter referred to as the transducer) which is used under the mine with combustible-gas explosive atmosphere.

2 Normative References

The following standards contain provisions which, through reference in this standard, constitute provisions of this standard. For dated reference, subsequent amendments to (excluding corrigenda), or revisions of, any of these publications do not apply. However, all parties coming to an agreement according to this standard are encouraged to study whether the latest edition of these documents is applicable. For undated references, the latest edition of the normative document applies.

GB 191 Packaging - Pictorial Markings for Handling of Goods

GB/T 2423.1 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Tests A: Cold

GB/T 2423.2 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Tests B: Dry Heat

GB/T 2423.4 Basic Environmental Testing Procedures for Electric and Electronic Products - Test Db: Damp heat, Cyclic

GB/T 2423.5 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Ea and Guidance: Shock

GB/T 2423.8 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Ed: Free Fall

GB/T 2423.10 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Fc and Guidance: Vibration (Sinusoidal)

GB 3836.1-2000 Electrical Apparatus for Explosive Gas Atmospheres - Part 1: General Requirements

GB 3836.4-2000 Electrical Apparatus for Explosive Gas Atmospheres - Part 4: Intrinsic Safety

GB 4208 Degrees of Protection Provided by Enclosure (IP Code)

GB 9969.1 General Principles for Preparation of Instructions for Use of Industrial Products

GB/T 10111 Methods for Random Sampling by Utilizing Dices of Random Number

MT 209 General Technical Requirements for Electric and Electronic Product for Communication, Detection, and Control in Coal Mine

MT 210 Basic Test Methods for Electric and Electronic Products for Communication, Detection and Control in Coal Mine

MT/T 772 Measuring Methods for the Primary Performances of Coal Mine Supervision Systems

3 Terms and Definitions

3.1

Displayed value

A measured value displayed on the transducer.

3.2

Zero point

A value displayed when the transducer works normally in the pure nitrogen.

3.3

Calibration point

A value of calibration gas sample selected for the transducer to meet the requirements of measuring accuracy.

3.4

Alarm point

An alarm start value of the transducer pre-set according to the operating requirement.

3.5

Basic error

A measuring error of the transducer determined under the normal test conditions.

3.6

Stability

Performance for the zero point, calibration point and alarm point of the transducer to maintain within the range of permissible variation under the specified working condition and within the specified working time.

3.7

T_{90} response time

The time used by the transducer to reach 90% that of the stable value in case of step change in the carbon dioxide (CO₂) concentration.

4 Transducer Classification

4.1 Classification

The transducer may be classified as follows according to the operating functions: